ZIXUAN LIANG

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Availability: July-December 2020

EDUCATION

Northeastern University, Boston, MA *May 2019 - Present*
Ph.D. in Computer Engineering
GPA: 3.7/4.0
Supervisor: Prof Jose Martinez
Research topic: unmanned aerial vehicle, computer vision, machine learning
Courses: Database Management Systems, Machine Learning & Pattern Recognition, Applied Probability & Stochastic Process, Information Retrieval, Advanced Machine Learning, GPU Programming

Zhejiang University, Hangzhou, China *September 2011 - June 2015*
B.Eng. in Electronic & Information Engineering
GPA: 3.9/4.0
Selected honors and awards: Outstanding Graduates (5%), National Endeavor Scholarship (3%)

SKILLS

Programming	Python, C++, SQL, JavaScript, CUDA
Research Tools	TensorFlow, PyTorch, OpenCV, ROS, Git

RESEARCH AND WORK EXPERIENCE

Northeastern University, Boston, MA May 2019 - Present
Graduate Research Assistant

- Project: Sensing, Imaging, Control, Actuation, and Deep Learning for Distributed Agents Operating under Uncertainty.
- Develop swarm of unmanned aerial vehicles, which can execute predefined tasks simultaneously in outdoors, including sensing, navigation, object detection and tracking.
- Utilize different kinds of sensors, including millimeter wave radar, RGB camera, depth camera, lidar and thermal camera.
- Use convolutional neural network similar to MobileNet to encode sensors data for multimodal representation, producing compact feature vector that forms input to drone manipulation policy learned via reinforcement learning.

Lonza, Visp, Switzerland October 2017 - October 2018
Data Analyst

- Developed Master Data management process and maintained Master Data quality.
- Built user friendly chatbots that are online 24/7 for training new employees and handling SAP request inquiries, using deep Seq2Seq encoder-decoder model.
- Visualized Master Data with interactive dashboard and data charts to help managers make informed decisions, using tools including Microsoft Power BI and open source library d3.js.
- Improved Master Data management process efficiency by developing OCR program to process scanned documents, using novel convolutional-recurrent neural network.

RTBAsia, Shanghai, China July 2015 - September 2017
Software Engineer

- Developed machine learning and deep learning algorithms, including model design and optimization for neural networks, transfer learning, feature extraction and stochastic optimization.
- Built and maintained a Brand Safety System to protect advertisers on demand-side platforms against websites with inappropriate content, using state-of-the-art convolutional neural networks in face recognition and image classification such as Inception-ResNet achieving 95%+ accuracy.

SELECTED PROJECTS

Hands-On Convolutional Neural Network December 2017
An Open-Source Book

- A handbook summarizing my understanding and experience of convolutional neural networks. My goal of writing this handbook is to share it with the community and help others train better deep learning models.

Image Captioning in Chinese December 2017
AI Challenger Global Competition

- Automatically generate captions in Chinese to describe images based on Neuraltalk2 and PyTorch. Improvement compared to Neuraltalk2 includes: train-validation-test splitting technique, preprocessed features, ResNet architecture and ensemble models. Ranked 3rd on the test dataset.

SLAM-Based 3D Reconstruction May 2015
Bachelor's Thesis

- Rebuilt the 3D models of the scene by inputting a series of RGB-D images, including point cloud generation, frames mapping and 3D point fusion. Based on C/C++, OpenCV and OpenGL, the core data structure and algorithms contain kD-tree, and SVD-based or Linear Approximation-based ICP.